SmartyManager

User manual

SmartyCAM

Racing Data Power

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Chapter 1 – Installation

SmartyManager is the software suite specifically designed and developed by AIM to configure **SmartyCam**. **SmartyManager** allows users to customize the appearance of their data and video integration.

1.1 – Software installation

To install **SmartyManager** software onto your computer, please insert the included setup disk into the CD drive and save the **SmartyManager** executable file on the PC Desktop. Should the disk be missing, visit www.**SmartyCam**.com to download a complimentary copy. Once saved, double-click the setup icon (shown below) to start software installation.

SmartyManager Setup Wizard will guide the user through the required software setup.

1.2 – Driver installation

Note: in order to guarantee optimal device performance, use only USB 2.0 ports.

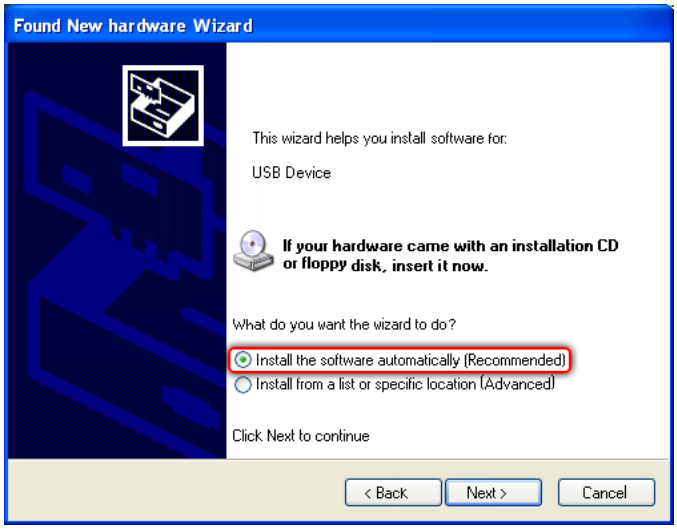
Upon successful installation of **SmartyManager** software, USB driver installation may start. USB Driver is the software that makes **SmartyCam** communicating with the PC.

To begin USB driver installation process, connect **SmartyCam** to the PC with the provided USB cable. The computer should automatically recognize that a USB device has been connected (Figure below). Click on **Found new hardware** prompt, if the Found New Hardware Wizard does not appear automatically.

This window appears

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Select **No, not this time** and click **Next >**.
This window appears.


Found New hardware Wizard
This wizard helps you install software for:
USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue
< Back
Next >
Cancel

Select “Install the software automatically (Recommended)” and click “Next>”.

USB Driver files will now be loaded onto the Pc. At the end of the process the camera can be configured.

Chapter 2 – Quick Guide

2.1 – Different working modes

It is first of all important to remember that **SmartyCam** can be used in three different ways:

- standalone: with no connection with any AIM system;
- connected to the vehicle ECU through AIM ECU Bridge or, if the vehicle has no ECU or has an ECU that does not communicate through CAN/RS232 or K Line connected through RPM Bridge to the coil low voltage output;
- connected to an AIM dash or logger (**MXL Strada/Pista/Pro05**, **EVO3 Pro/Pista**, **MyChron4**).

In **SmartyCam** user manual quick guide is a clear explanation of these three working modes; that document includes also explanation of some custom setting that are needed. Here is assumed that these custom setting has already been performed.

4.2 – Configuring SmartyCam and AIM devices connected to it

Some very simple but necessary preliminary operations are to be performed to use **SmartyCam**:

SmartyCam is standalone:

- connect **SmartyCam** to the computer through the provided USB cable;
- run **SmartyManager**;
- create a new configuration or select an existing one (Paragraph 3.1);
- add/delete/modify objects and set the related parameters;
- transmit the configuration to **SmartyCam** (Paragraph 3.5);

SmartyCam is connected to other AIM systems (ECU Bridge, RPM Bridge, MXL Strada/Pista/Pro05, EVO3 Pro/Pista, EVO4, MyChron4).

Once teh operations below explained are over it is necessary to configure the AIM system so that it can transmit the required information (e.g. RPM and/or temperature value, brake/accelerator pedal position, etc..). It is thereby necessary:

- if **SmartyCam** is connected to **MyChron4** configure the logger and connect it to **SmartyCam**;
- if slave of an AIM device unplug **SmartyCam** from the PC and plug the device through its USB cable;
- connect **SmartyCam** to the PC through the provided USB cable;
- run **Race Studio 2** (include in the CD or downloadable free of charge from www.aim-sportline.com);
- configure AIM device;
- click **SmartyCam Functions setting**;
- transmit the configuration to AIM device;
- connect **SmartyCam** to AIM device and power the system ON.

Chapter 3 – How to configure SmartyCam

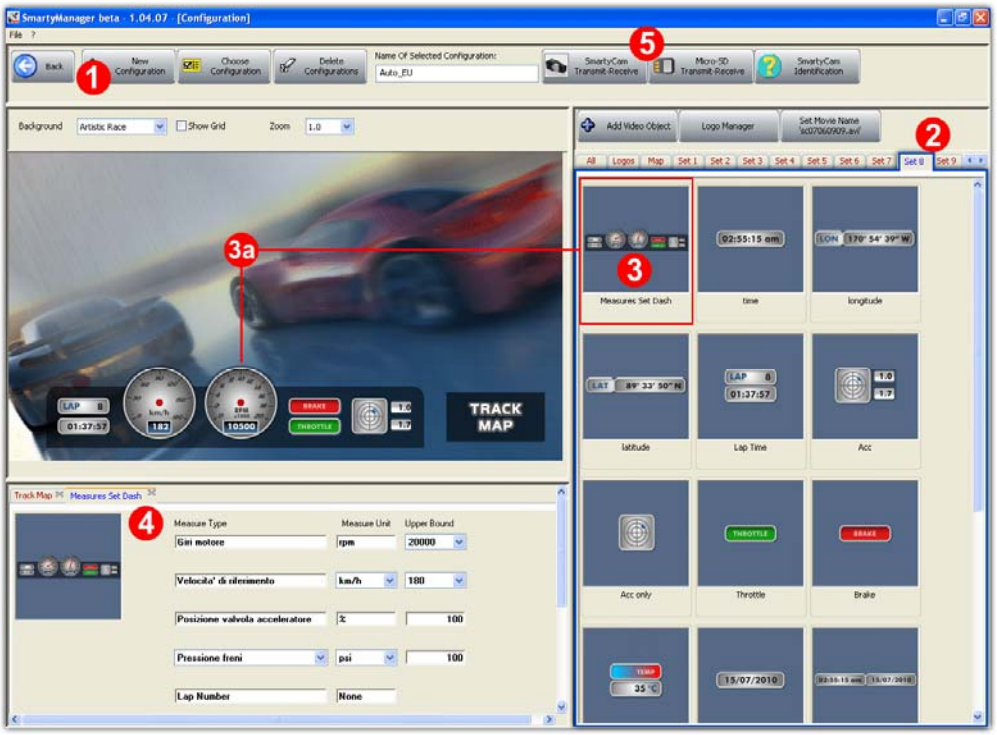
After software installation the shortcut icon shown here below appears on the PC Desktop.

Running the software this window appears

Click “**SmartyCam Configurator**”.

3.1 – How to create a new configuration

With **SmartyManager** graphic objects that will create the video overlay can be displaced as wished.



To create a new configuration:

- press “New Configuration” (**1**) and fill the related panel that appears with the desired name;
- right of the preview panel available graphic objects are grouped in “Sets” (**2**);
- double click on the desired object (**3**) to select it or drag and drop it in the preview area (**3a**);
- fill in the layer of the loaded object that appears down on the left of the software window (**4**);
- once all elements have been set transmit the configuration to **SmartyCam** or to the micro SD (**5**). See paragraph 3.5 for further information.

3.2 – How to modify or delete an existing configuration

With **SmartyManager** an existing configuration can be modified/deleted:

- press “Choose configuration”/”Delete Configurations”;
- a choice panel appears;
- select the configuration to modify/delete;
- press “Confirm selection”/”Delete selected configurations”;

Warning: SmartyManager automatically saves each configuration. This means that any modification made will be saved upon exit; automatic undo is not possible. After exiting any change must be undone manually.

3.3 – How to insert track map and logos in the configuration

As shown here below, in addition to “Set” layers others are available to manage the Map and the logos to be inserted in the configuration.

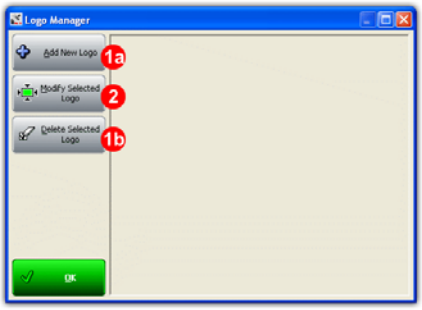
3.3.1 – The track map in SmartyCam overlay

Map layer allows to place the track map in **SmartyCam** overlay. It is possible to resize the track object. Please note: the track shape will fit this area. See paragraph 4.1 for further information.

3.3.2 – Logo management in SmartyCam overlay

“Logo manager” button, located at the top of the Overlay Toolbox, adds/deletes/modifies custom logos and images from **SmartyManager** and thereby from **SmartyCam** overlay. Supported image formats are: .png, .jpg .bmp and .tga but **“.Png” format is the only compatible with transparency effect**.

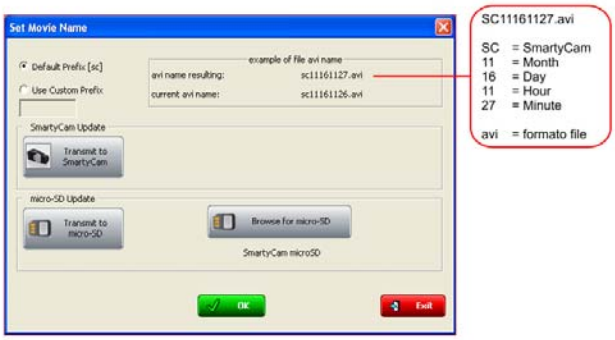
Pressing “Logo Manager” a panel appears:



- “Add new logo” (**1a**) adds an image/logo following the proper path; “Logo Settings” panel appears: fill it in and the logo/image is added to “Logos” layer: drag it in the preview area;
- “Delete selected logo” (**1b**) deletes the image/logo from **SmartyCam** overlay;
- “Modify Selected Logo” (**2**) resizes and renames the image/logo.

3.4 – How to name SmartyCam movies

Pressing “Set Movie Name” the related window appears. It allows to customizes how **SmartyCam** names each stored video. Video name has a mandatory part that is date and time of the file but the prefix can be changed. The images here below shows on the left default movie name that includes the letters “SC” (to indicate that the file was generated with **SmartyCam**) and on the right a custom prefix. Max number of allowed characters for the movie prefix is eight.

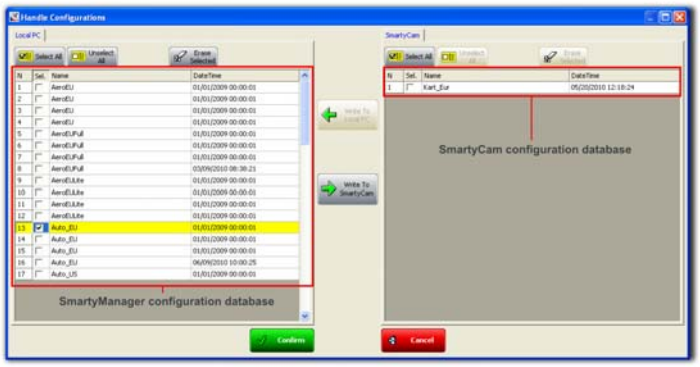


Once filled the panel transmit the configuration to **SmartyCam**.

3.5 – How to transmit the configuration

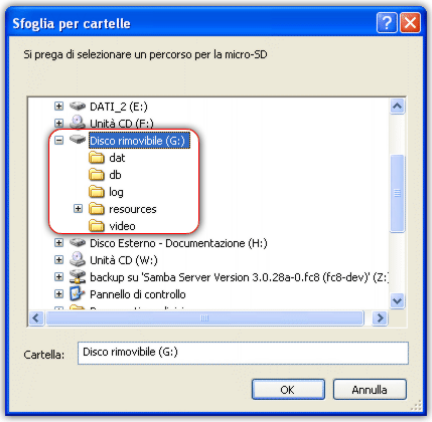
With **SmartyManager** the configuration can be transmitted to **SmartyCam** via USB or copied on the micro SD (of course connected to the PC) that will be read by **SmartyCam**.

After having connected **SmartyCam** to the PC through the proper USB cable, click “**SmartyCam Transmit-Receive**”, to transmit /receive from **SmartyCam** the configuration using the panel shown here below.



Please note: in order to transmit data and configurations to the Micro SD card and to SmartyCam ensure that the micro SD is inserted into SmartyCam.

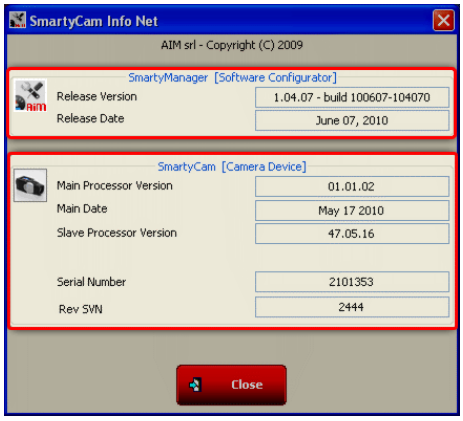
"Micro SD Transmit-Receive" key recalls "Browse" window: browse the PC until the micro SD is found as shown here below.



Copying configurations directly to **SmartyCam** Micro SD card, it will be necessary to enter **SmartyCam** menu to load any configuration. Page through the following options: **Menu**>>**SETTINGS**>>**CONF LOAD**. Refer to **SmartyCam** user manual for further information on this function.

3.6 – How to identify one's own SmartyCam

Clicking **AIM system identification** in the Configurator Toolbar, **SmartyManager** software initializes communication with **SmartyCam** and displays this information panel.



SmartyCam Info Net window categorizes your system information into two sections: SmartyManager information and **SmartyCam** information.

3.7 – How to configure an AIM device if connected to SmartyCam

For **SmartyCam** to show on the video engine values (like RPM, temperatures, etc...) it is necessary to connect it to one of the AIM loggers that can transmit data like:

- data loggers: **EVO3 Pro/Pista**, **EVO4**;
- dashes/data loggers: **MXL Strada/Pista/Pro05**;
- devices for connections with ECUs: **ECU Bridge**;
- RPM loggers form coil: **RPM Bridge**;
- loggers for kart: **MyChron4**.

The systems have to be properly configured to transmit correct data. As far as **MyChron4** is concerned see paragraph 3.8.
As far as all other systems are concerned **Race Studio 2** software is needed. A copy is included in **SmartyCam** setup disk. If not visit www.aim-sportline.com and download a complimentary copy.
For additional assistance installing or navigating **Race Studio 2** and configuring AIM loggers or **Bridge**, please refer to the user manual, which is downloadable from our website, area download software, in PDF form, free of charge.

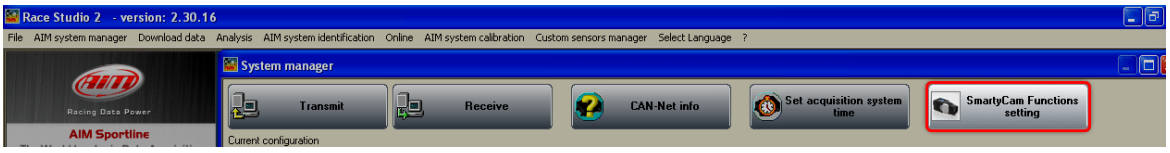
To configure an AIM **Bridge** or logger connected to **SmartyCam**, ensure that the system firmware can manage **SmartyCam**. Below the minimum firmware requirements for each system are outlined:

- ECU Bridge – firmware version 45.01.05 or later;
- RPM Bridge – any firmware version;
- MXL Strada/Pista/Pro05 – firmware version 14.86.45 or later;
- EVO3 Pista/Pro – firmware version 28.08.26 or later;
- EVO4 – firmware version 43.02.17 or later;

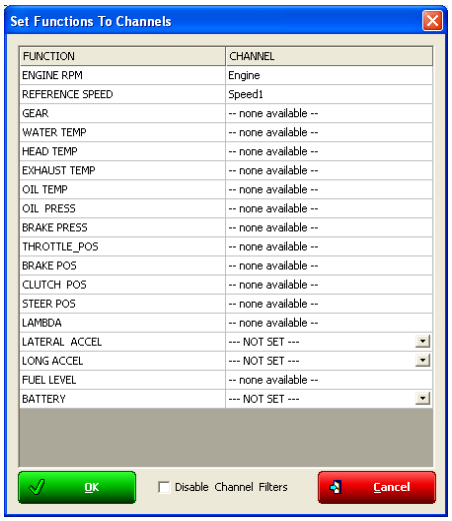
To download the latest firmware visit www.aim-sportline.com, area download firmware.

Please refer to the following steps to configure AIM devices connected to **SmartyCam**:

- connect **SmartyCam** to the computer via the provided USB cable;
- run **SmartyManager** software and go to **SmartyCam Configurator**;
- create a new configuration or select an existing one from SmartyManager database;
- transmit the configuration to **SmartyCam** clicking **Transmit configurations**;
- unplug **SmartyCam** from the computer and plug AIM **Bridge/**logger with the supplied USB cable. Be sure to power the system ON;
- run **Race Studio 2** software;
- click “AIM system manager” on the left side of the screen;
- select the system;
- the configuration database for the selected system-type should then open;
- select an existing system configuration or choose to build a new one; be sure to add and set up any additional expansions that may be connected;
- navigate back to **Select configuration** tab;
- press “**SmartyCam Functions setting”** in the upper right corner of the screen;


Race Studio 2 - version: 2.30.16
File AIM system manager Download data Analysis AIM system identification Online AIM system calibration Custom sensors manager Select Language ?
System manager
Transmit
Receive
CAN-Net info
Set acquisition system time
SmartyCam Functions setting
Racing Data Power
AIM Sportline
Current configuration

- "Set Functions to Channels" window appears. It links data channels monitored with AIM Bridge or logger to the objects visualized in **SmartyCam** video. For example, to display engine RPMs on **SmartyCam**, the channel monitoring or logging RPM in AIM **Bridge** or logger is to be linked with the **SmartyCam** corresponding channel. Data visualization in **SmartyCam** is limited to the list of channels outlined in "Set Functions To Channels" window. This setup window shows the available functions on the left and the channels to link them to on the right. Certain available channels feature a drop down menu, which displays different AIM Bridge or data logger channels compatible with that predefined function. If, for example, the function is "water temp", the drop down menu will show all available temperature channels. In some cases, the channel to link will not be displayed in the drop down menu. If that happens, select **Disable Channel Filters** option and it will be possible to select any of the enabled and available AIM Bridge or data logger channels. Of course RPM Bridge can only be connected to RPM channel.



- Click **OK** and transmit the configuration to AIM Bridge/logger;
- turn AIM **Bridge** or logger OFF. Connect **SmartyCam** via the provided cable to the system, power it back ON. **SmartyCam** has now been successfully integrated

Please refer to **Race Studio Configuration** user manual for further information concerning configuration of an AIM **Bridge** or logger.

3.8 – Configuring MyChron 4 when connected to SmartyCam

Before connecting **SmartyCam** to **MyChron 4**, ensure that this last has a firmware version 31.58.07 or later. To download **MyChron 4** latest firmware, visit www.aim-sportline.com, download firmware area. **MyChron 4** will automatically link available channels to those visualized on **SmartyCam**. Also in case **MyChron4** is connected to **eBox Extreme** connecting **SmartyCam** to **MyChron4** the loggers will automatically communicate.
MyChron4 automatically recognizes **SmartyCam** and shows on the display the channels that have been set and that corresponds to **SmartyCam** configuration.

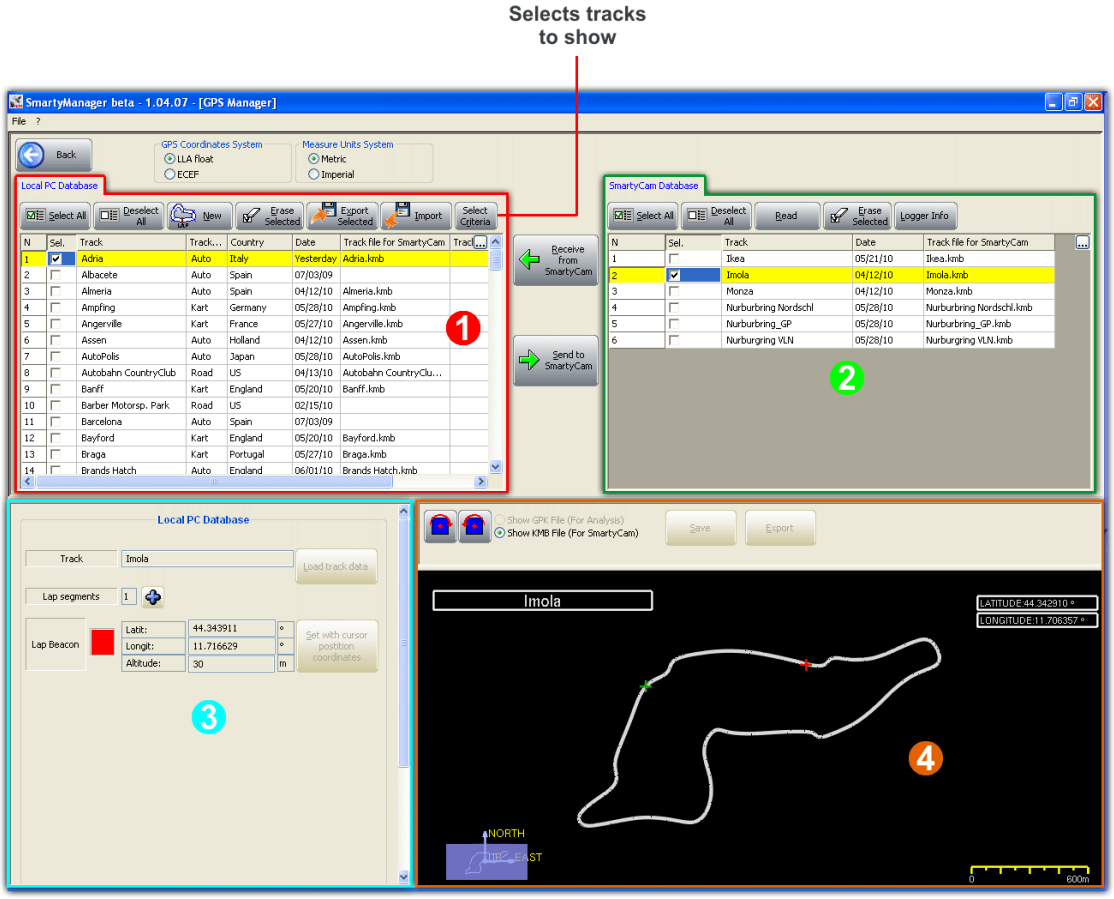
Warning: if connecting a SmartyCam to a MyChron 4 and eBox Gold or Extreme, external 12V power is to be run to the system in order to ensure proper function. Please refer to www.smartycam.com connection section and select MyChron4 data logging system for any further information on SmartyCam-MyChron4 connection schemes.

Chapter 4 – The new “Tracks” function for track management

Tracks management and loading in **SmartyCam** overlay is made in two steps: the first is adding “Map” object in **SmartyCam** overlay while creating the configuration (paragraph 3.3); the second is the real loading of the track map file that comes through “Tracks” menu. Press the corresponding button highlighted below.

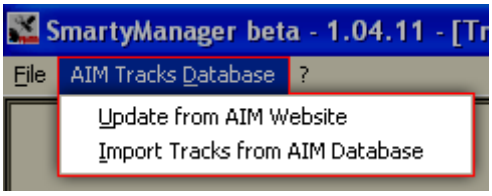
"Tracks" window, shown here below, is made up of four main panels:

- Local PC (software) Database (**1**);
- **SmartyCam** database (**2**);
- Visualized track information panel (**3**);
- Track map (**4**).



In addition to the numbered panels are: "GPS Coordinate systems" panel to select the GPS coordinates to use, "Measure unit system" to decide whether using the Metric or the Imperial measure unit system (above panel "**1**") as well as "Receive from **SmartyCam**" and "Send to **SmartyCam**" buttons to move configurations from **SmartyCam** to the software and vice versa (between panels 1 and 2).

On top of the page is Menu bar, shown here below.



Through "AIM Tracks Database" Menu it is possible to update the tracks database via the AIM corporate website (ensure that a web connection is available) or to restore the software default database.

4.1 – How to insert the track map in SmartyCam overlay

Between the objects **SmartyCam** can include in its overlay particularly important is the "Map".

The proceeding to insert the track map in **SmartyCam** overlay is made up of three steps.

1 – Add the "Track" object in SmartyCam overlay:

- from **SmartyManager** main page press "SmartyCam configurator";
- add the "Map" object to **SmartyCam** overlay and resize it to fit the expected track (Paragraph 3.3.1);
- place the object paying attention not to overlap one another;
- transmit the configuration to **SmartyCam** (Paragraph 3.5).

2 – Load the track map in SmartyCam:

- go back to **SmartyManager** main page;
- press "Tracks";
- select the track in "Local PC Database" panel;
- press "Send to **SmartyCam**";
- wait for the confirmation message.

3 – Set the SmartyCam configuration that includes "Map" object on SmartyCam:

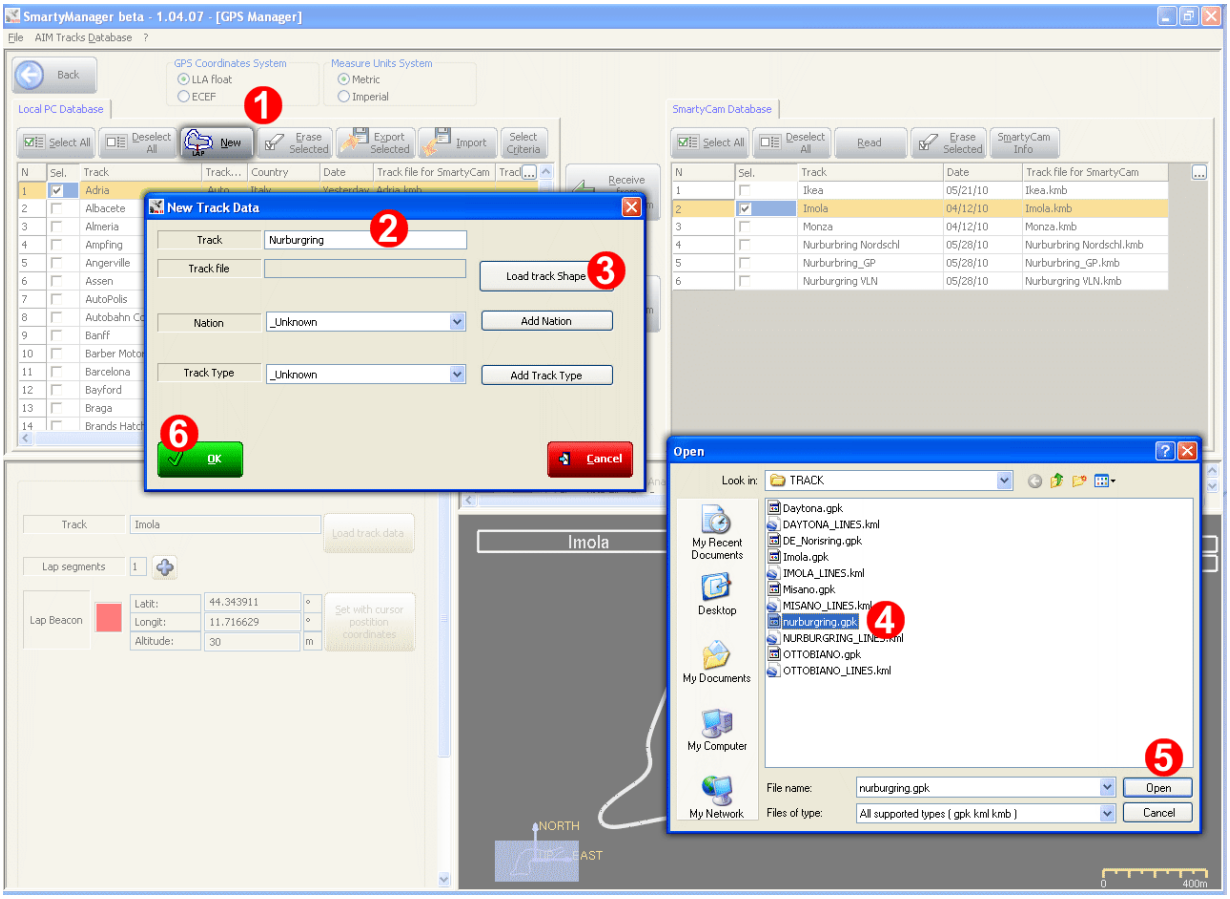
If **SmartyCam** detects a track included in its database (point 2) within a 5 km area, then sets it.

Only if more tracks are available in a 5 km area or if the same circuit has more tracks it is necessary to run two track laps ant the track is recognised and set.

4.2 – How to add a new track to SmartyManager database

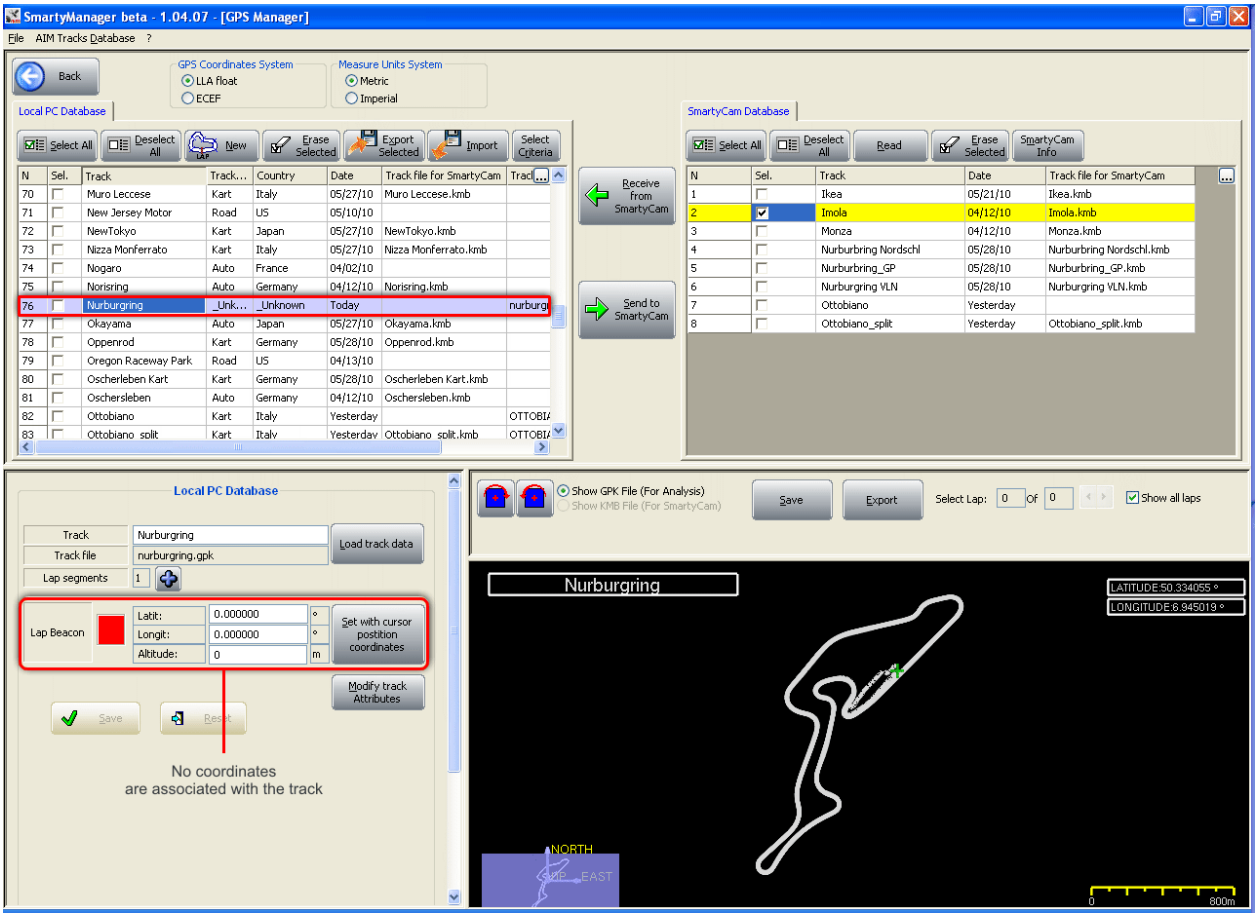
There are two ways to add a track cohordinates and/or its map to **SmartyManager** database: AIM recommends to use a ".gpk" format file of that track. This file is created by **Race Studio Analysis** software during data download from an AIM logger and it includes all laps of a run on the same track: .gpk file are stored in the folder where downloaded data are stored.
The second way consists in filling manually in the Lap beacon coordinates (see yellow box at the end of this paragraph).

To add a new track: load it in the local PC Database, set it and transmit it to **SmartyCam**.



To **add a track to "local PC Database"** (see above image)**:**

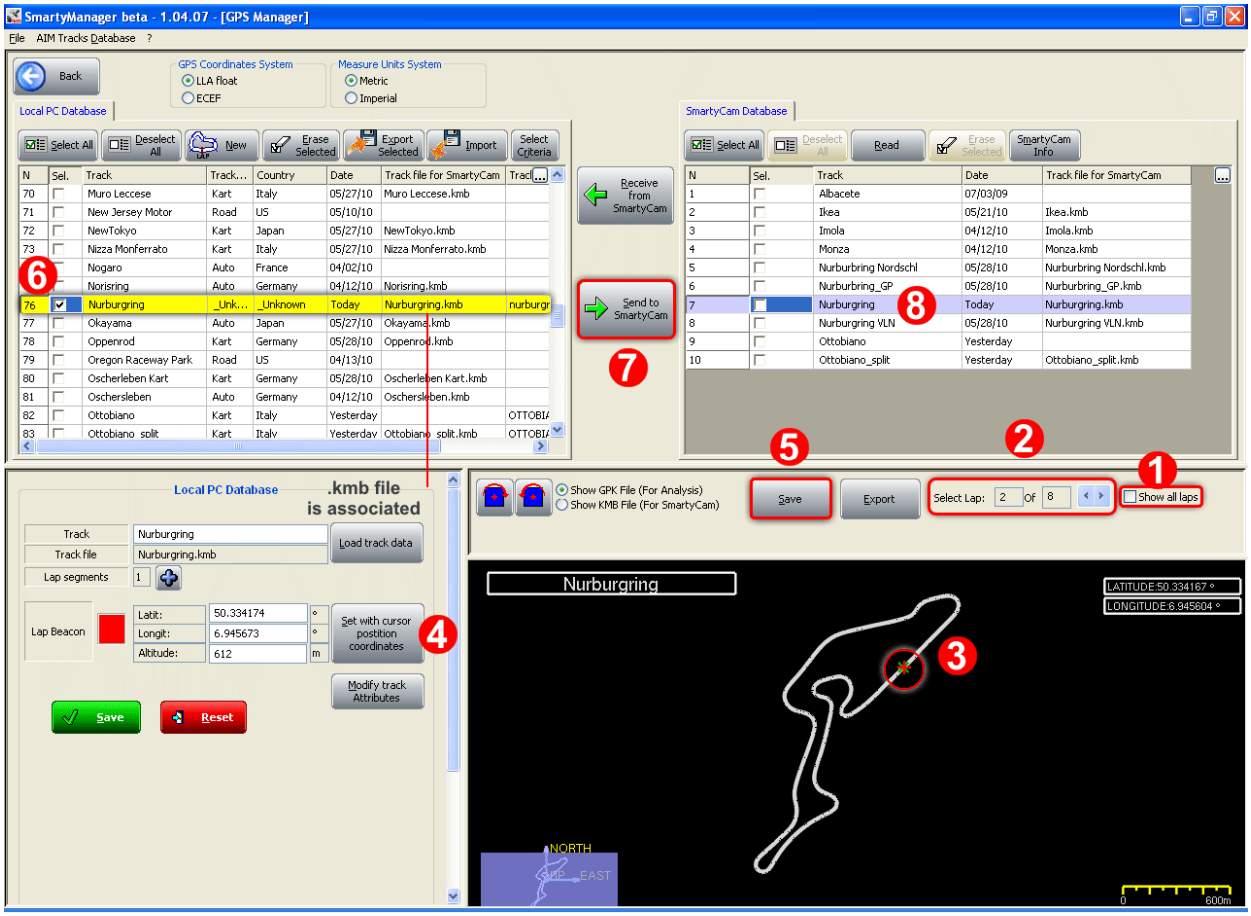
- press "New" (**1**);
- "New track data" panel appears, fill in the track name (**2**);
- press "Load Track shape" (**3**);
- "Open" panel appears already showing "TRACK" folder: select the desired ".gpk" file (**4**);
- press "Open" (**5**);
- the system comes back to "New Track Data" panel: fill in "Nation" and "Track Type" and press "OK" (**6**).



As shown here above, the track has been added to “Local PC Database” panel but there is no “.kmb” file associated.

In addition to this the software has placed the lap beacon at half of the run and it is thereby necessary to set the desired one as explained below.

To properly **set the track and transmit it to SmartyCam**:

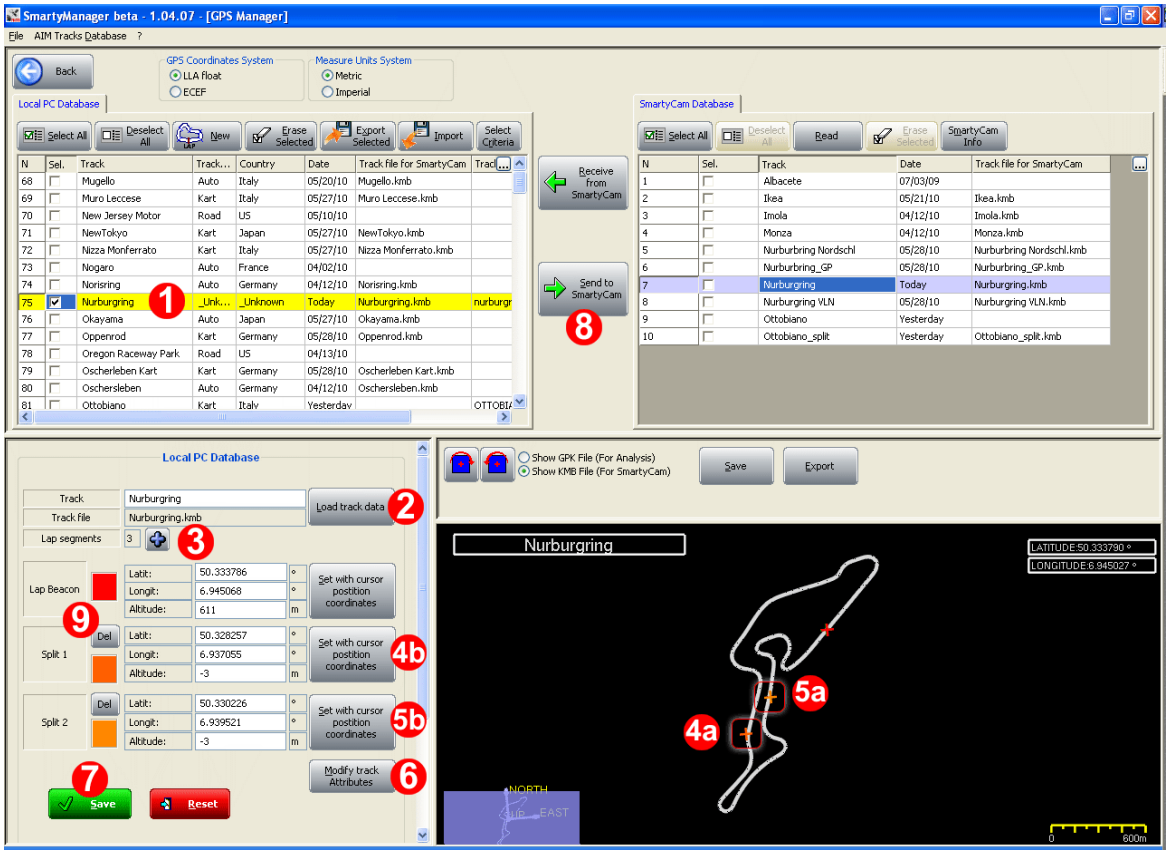


- disable “show all laps” checkbox (**1**);
- scroll all laps and select the one to be considered as track map (**2**);
- point the mouse where lap beacon is wished (**3**);
- press “Set with cursor position coordinates” (**4**) and the coordinates are set in the left boxes;
- press both “Save” (**5**);
- “.kmb” file has been associated to the track in “Local PC Database” panel as highlighted here above;
- enable the related checkbox (**6**);
- press “Send to **SmartyCam**” (**7**);
- after a short wait the track appears in “**SmartyCam** database” (**8**).

Warning: if no file of the desired track is available, it is enough to know its lap beacon GPS coordinates and fill them manually in the boxes left of “Set with cursor position coordinates” button, numbered “2” in the above image. No track map will be shown in the related panel but the lap beacon will be detected.

4.3 – How to modify an existing track

Once a track has been loaded and set it can be modified changing the lap beacon coordinates, adding end deleting splits and changing its attributes.



To modify a track:

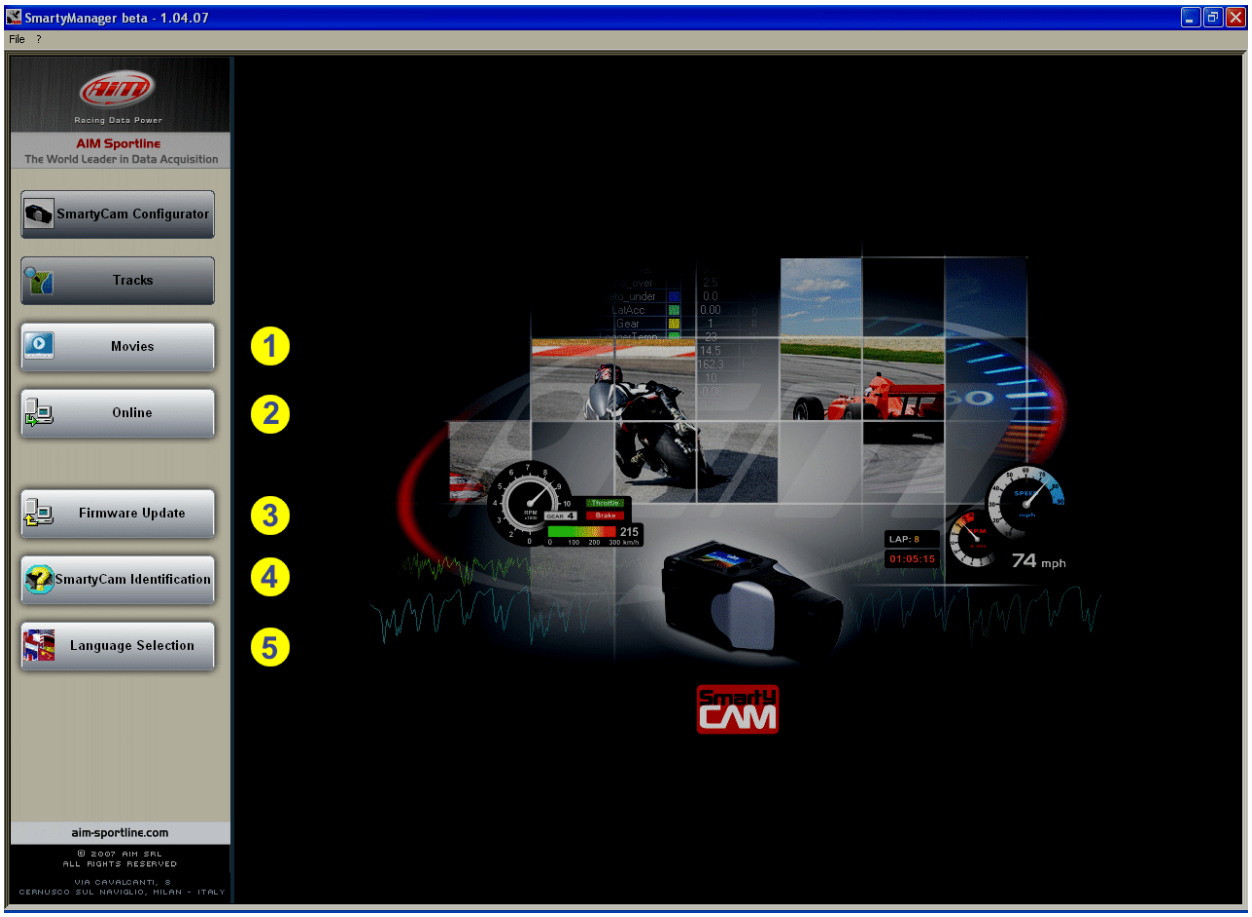
- activate it in “Local PC Database” panel (**1**);
- press “Load track data” (**2**) to substitute the “.kmb” reference file; this can happen in case more files of the same track are available;
- press “+” (**3**) and add the desired number of splits (up to five allowed);
- point the mouse where the first split is to be fixed and press the related “Set with cursor position coordinates” button (**4a** and **4b**);
- point the mouse where the second split is to be fixed and press the related “Set with cursor position coordinates” button (**5a** and **5b**) and so on for each split;
- press “Modify track attributes” (**6**) to modify track nation and type;
- press “Save” (**7**) and then “Send to **SmartyCam**” (**8**).

To delete a split press “Del” button of the split to delete (**9**).

It can be useful to have different configuration of the same track: for example different tracks or different overlay (with or without accelerometer, with or without RPM etc.). To do so proceed as to create a new item of the same track with a different name and modify it as here above explained.

Chapter 5 – Other functions of SmartyManager software

SmartyManager software provides several features to help during the use of the system.

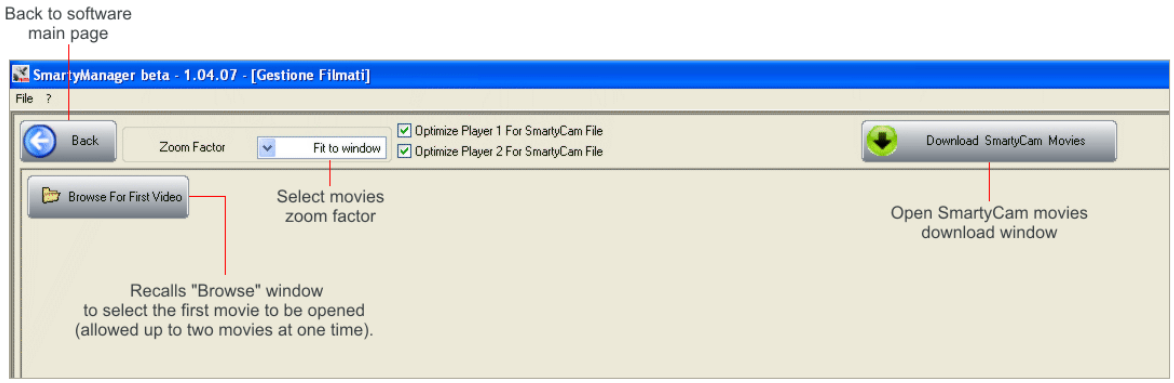


- **Movies** (1) downloads recorded movies directly from **SmartyCam**;
- **Online** (2) function allows to use the computer as a remote view finder;
- **Firmware Update** (3) feature gives the ability to update **SmartyCam** firmware with just a click;
- **SmartyCam identification** (4) provides with real-time system and firmware information;
- **Language Selection** (5) allows to choose from nine different viewing languages for **SmartyManager** software

Before attempting to use any of the features included in **SmartyManager**, please ensure to first power the unit ON and connect it to the computer.

5.1 – Movie file management

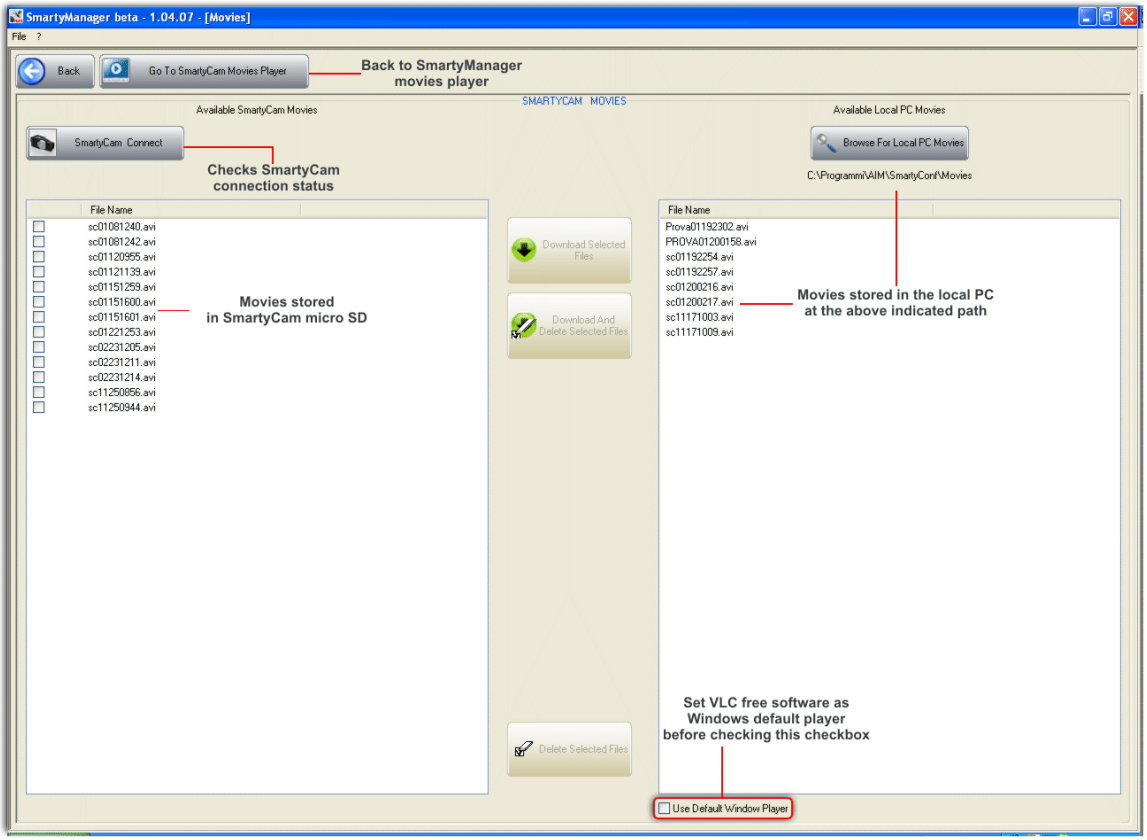
Selecting **Movies** option, this window appears.


Back to software main page
SmartyManager beta - 1.04.07 - [Gestione Filmati]
File ?
Back
Zoom Factor
Fit to window
Optimize Player 1 For SmartyCam File
Optimize Player 2 For SmartyCam File
Download SmartyCam Movies
Browse For First Video
Select movies zoom factor
Open SmartyCam movies download window
Recalls "Browse" window to select the first movie to be opened (allowed up to two movies at one time).

It allows both to download movies from **SmartyCam** ("Download **SmartyCam** Movies") and to play them loading up to two movies at a time. The movies can be zoomed to.

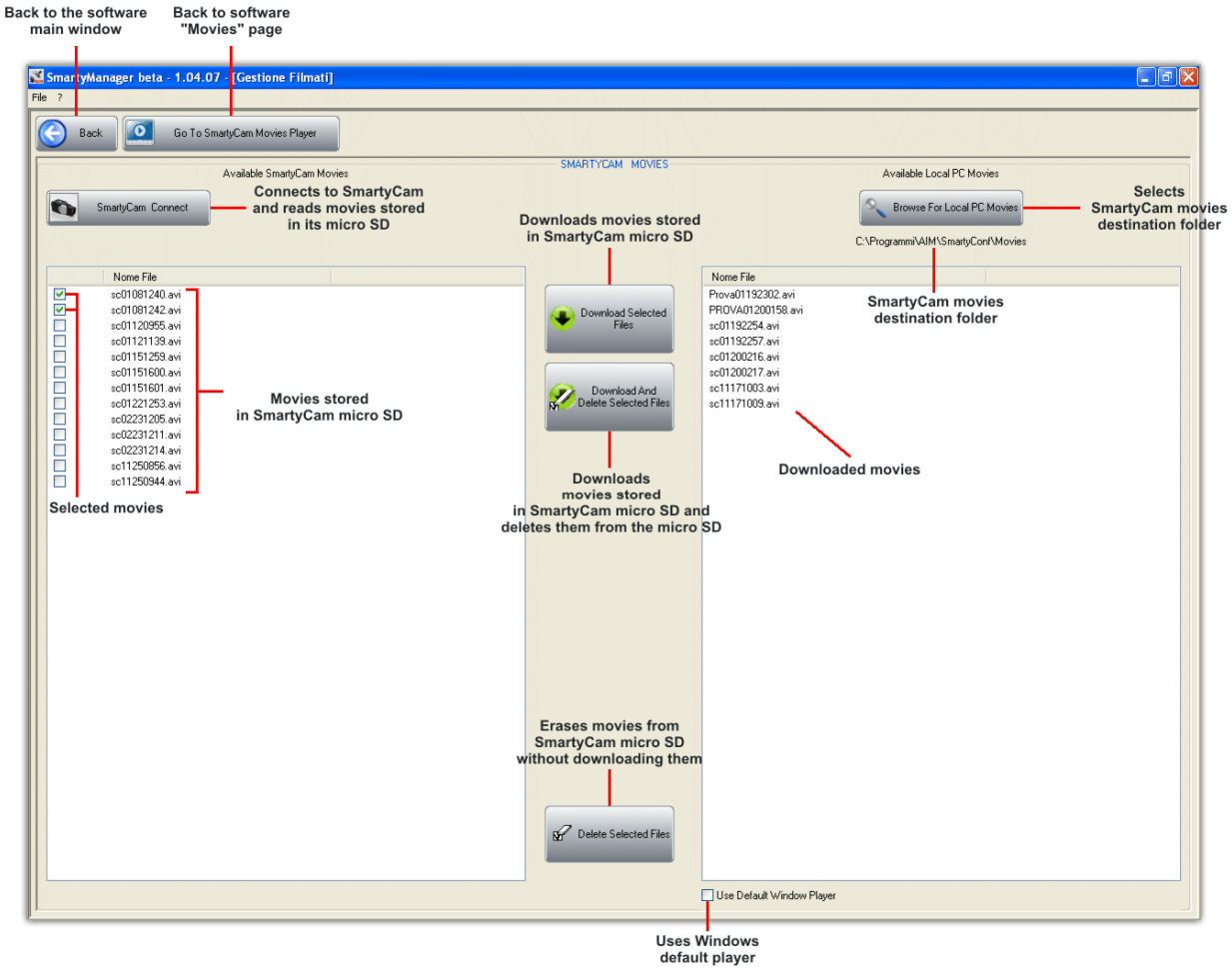
5.1.1 – Downloading movies from SmartyCam

Clicking "Download Movies from **SmartyCam**" Movie File Manager window appears displaying all movies stored on **SmartyCam** Micro SD card.



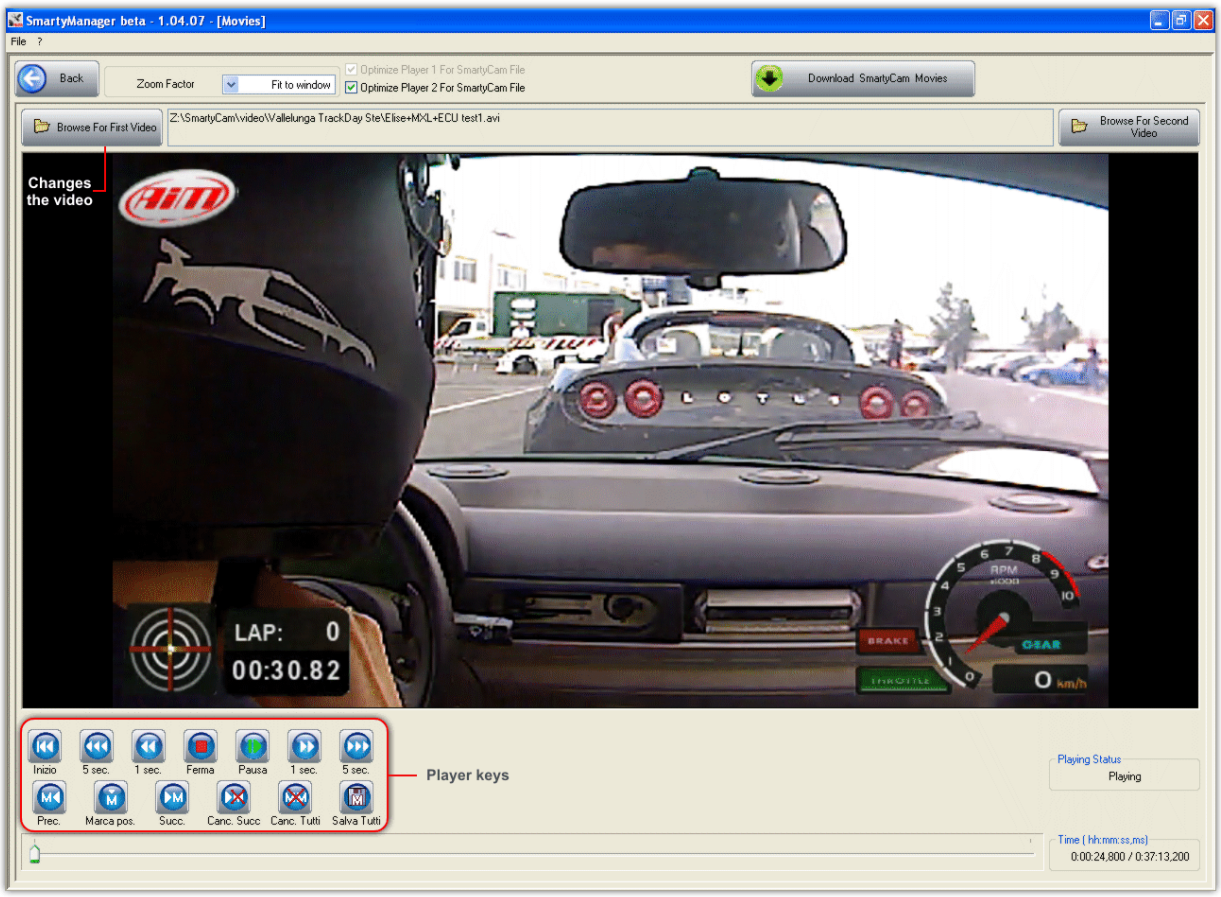
Warning: to play movies recorded with SmartyCam it is necessary to download "VLC" free software and set it as windows default player. It is necessary to have the checkbox highlighted bottom of the above image enabled.

Selecting at least one movie, central keys enable as shown here below.

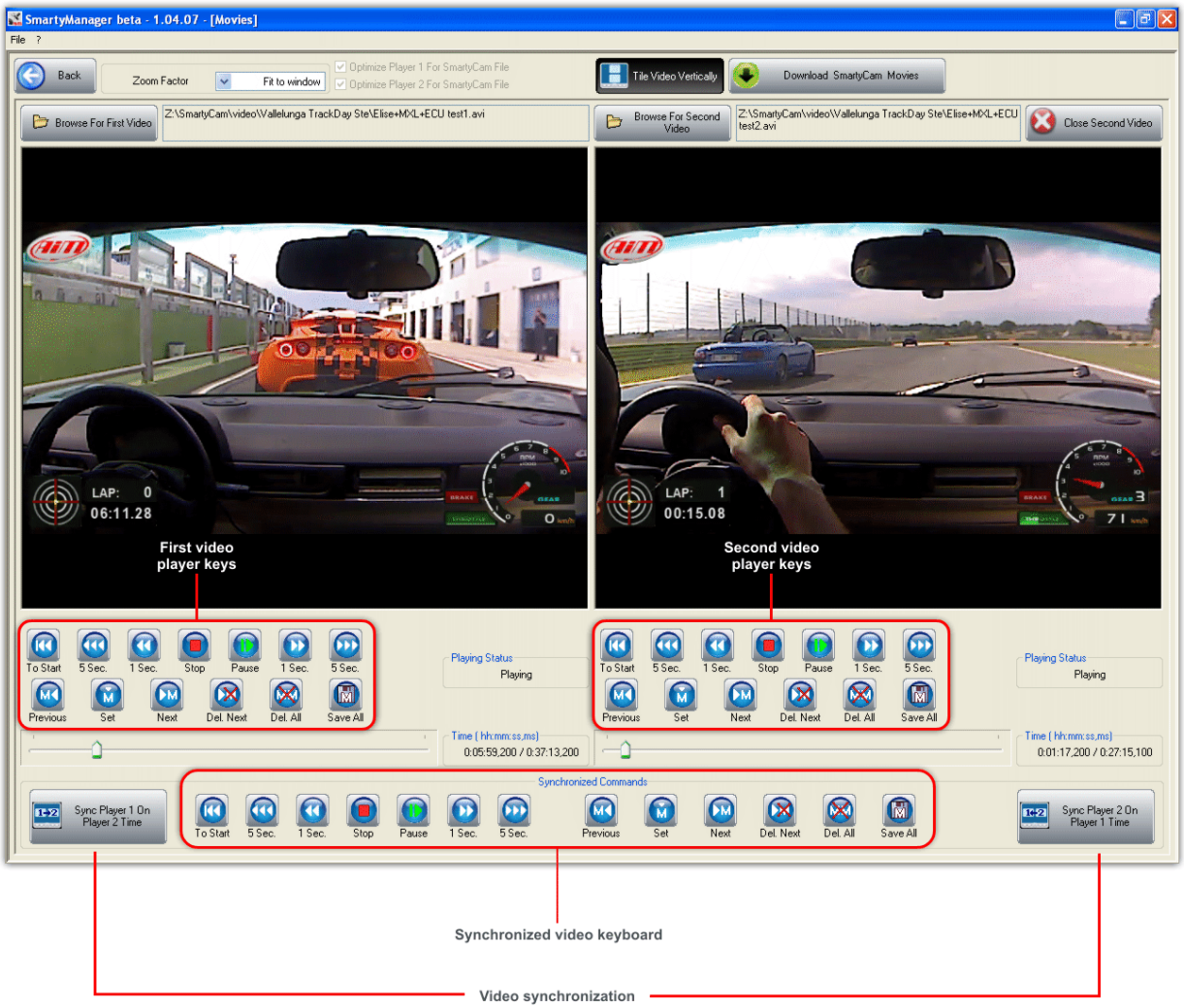


5.1.2 – Playing SmartyCam movies with SmartyManager player

SmartyManager has a built in player that plays up to two videos at a time and synchronizes them. Pressing “Browse for first Video” it is possible to browse the computer to select the video to load and play. Once the first video is loaded the windows modifies as shown below.

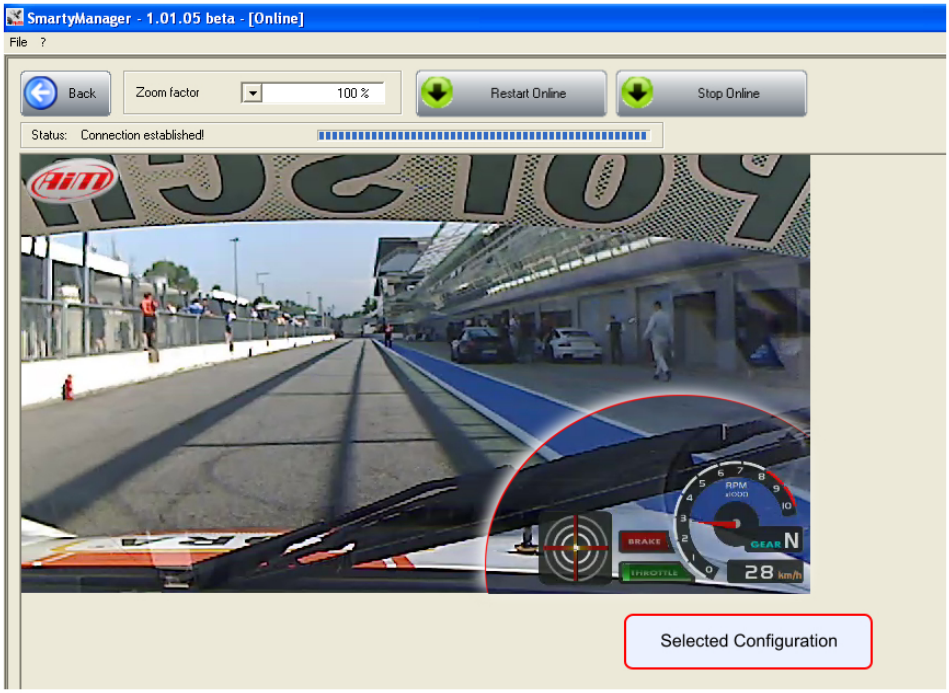


To play a second video press “Browse for second video”. The windows modifies as shown here below.

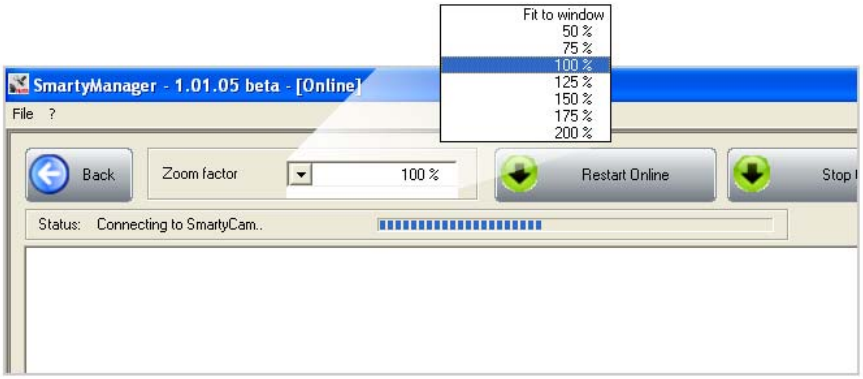


5.2 – Online

Online feature allows to see exactly what **SmartyCam** is seeing in real-time by making the computer a remote view finder.



Online feature allows to ensure that the currently selected and displayed configuration is the desired one showing real-time video at 15 frames per second. Available keys are shown here below.



Zoom option enlarges online viewing screen up to twice the standard size.

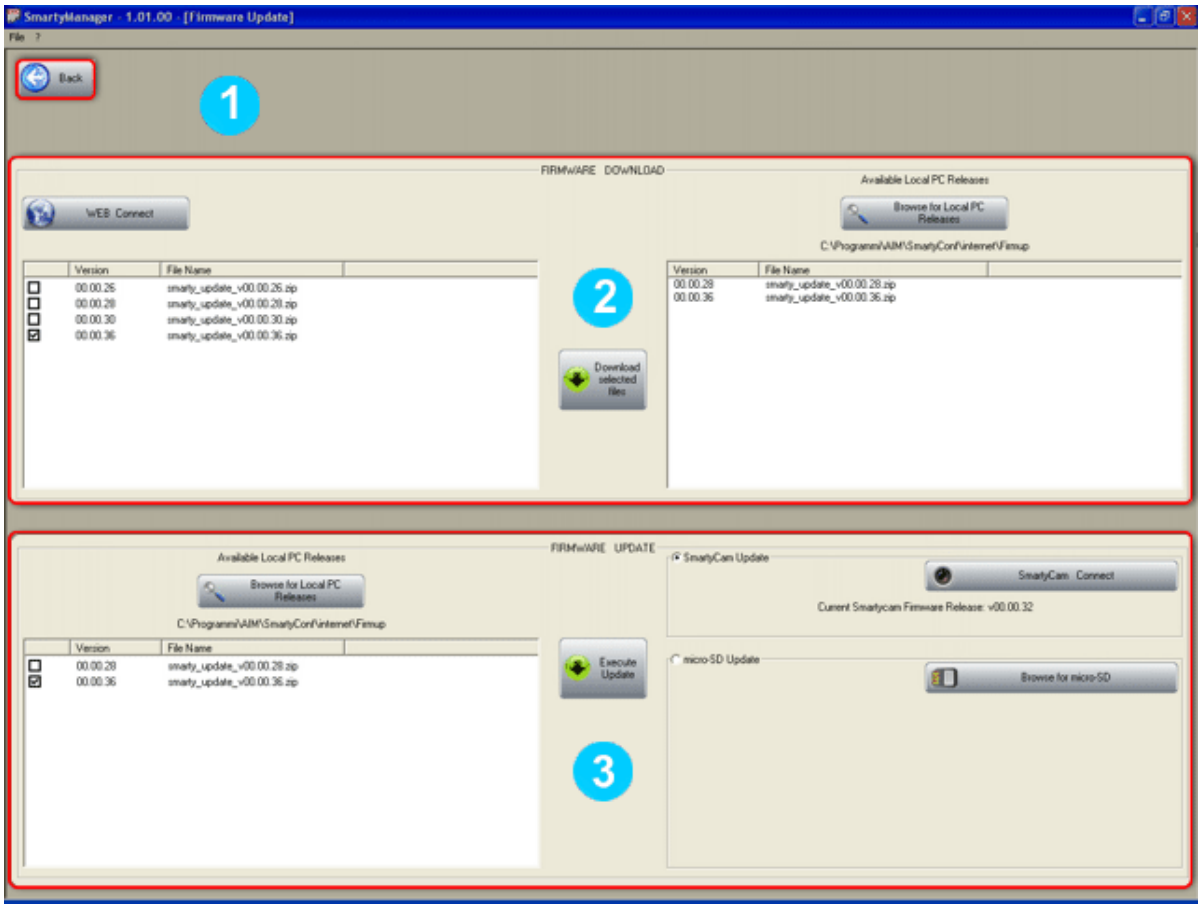
Restart online feature allows to come back to online mode without exiting. This feature should only be used if **SmartyCam** times out during use.

Warning: please use only "Back" button to come back to the software main window. Exiting in different ways can result in a software crash, loss of data, or SmartyCam lock-up.

5.3 – Firmware update

Firmware Update checks for firmware updates for **SmartyCam** anytime an Internet connection is present. **SmartyManager** will automatically search our online database and tell you whether or not your **SmartyCam** needs updating. Simply click on **Firmware Update** and the software will begin firmware query.

Afterwards this window appears



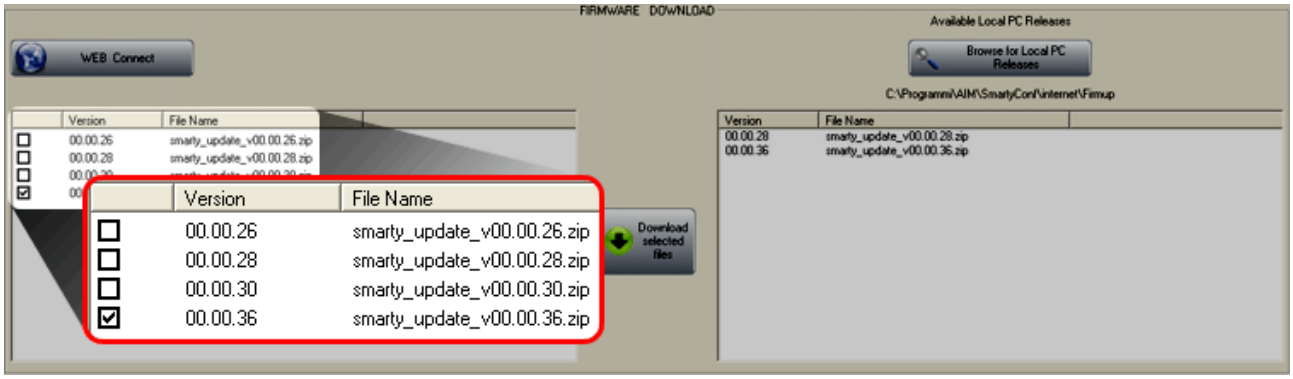
Back (1) button leads back to **SmartyManager** main window.

The remaining part of the window is divided in:

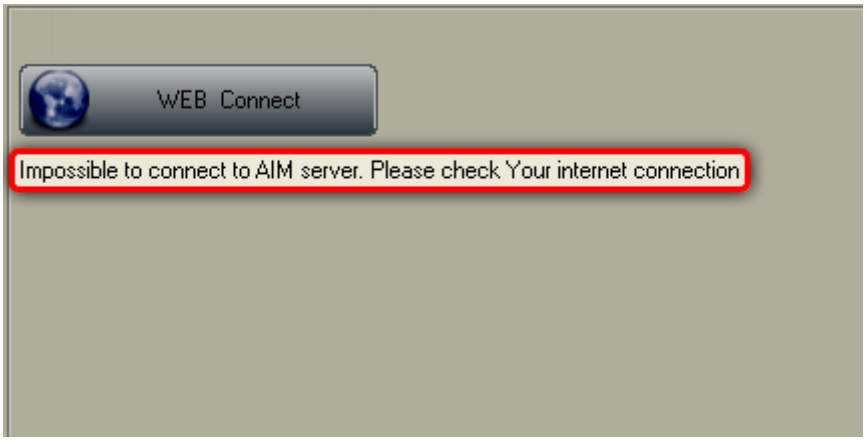
- firmware download (2 – paragraph 5.3.1)
- firmware update (3 – paragraph 5.3.2)

5.3.1 – Firmware download section

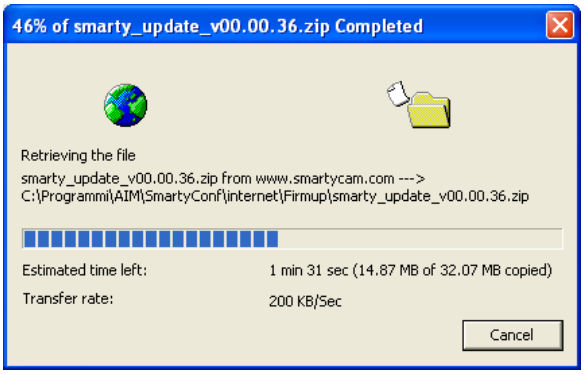
To view a complete list of firmware versions currently available online, click “WEB Connect” at anytime. To download the latest firmware updates for **SmartyCam**, ensure that Internet connection has been established, click “WEB Connect”, select a firmware version from the list (the software automatically selects the most recent release), and click “Download selected files” (Figure here below).



If attempting to initialize the firmware download process without first establishing an Internet connection, the system will prompt.



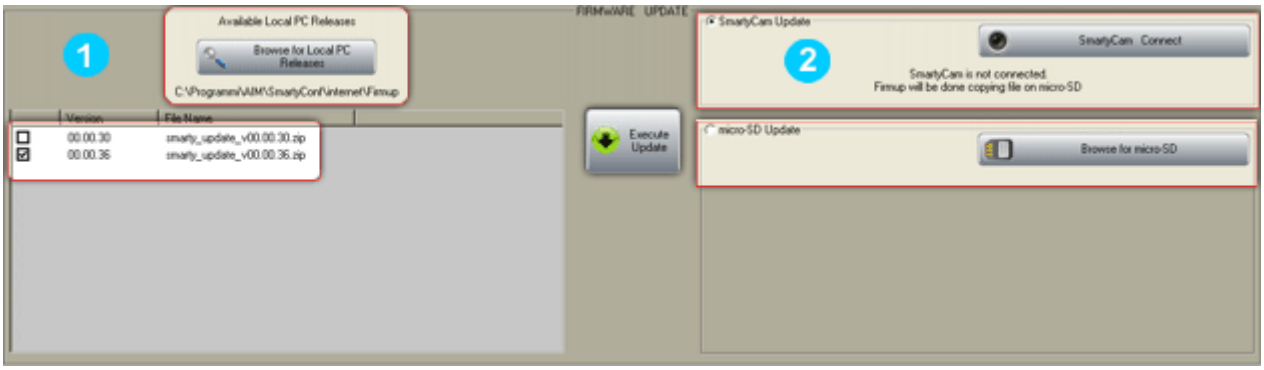
File sizes may vary depending on the update; the download process usually takes just few minutes, depending on Internet connection and data transfer speed.



Once firmware download is complete, the update will show up in both “FIRMWARE DOWNLOAD” panel and “FIRMWARE UPDATE” panel.

5.3.2 – Firmware update section

Once the latest firmware updates successfully downloaded, **SmartyCam** can be updated.



To start update process, select a firmware release from the list of “Available Local PC Releases” (1) in “Firmware Update” panel; the software will automatically select the most recent update. Updating options (2) are also located in “Firmware Update” panel. It is possible to update **SmartyCam** directly, if the system is connected to the computer, or to transmit the update directly to the Micro SD card.

To update the firmware on SmartyCam:

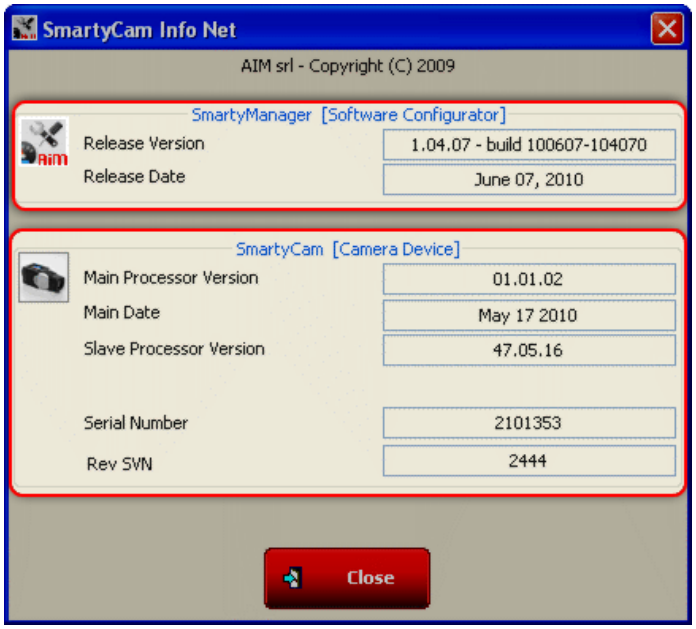
- ensure that **SmartyCam** is connected to the computer;
- select **SmartyCam Connect** option (2) located in “Firmware Update” panel;
- click **SmartyCam Connect** to establish connectivity;
- select a firmware release from the list of “Available Local PC Releases” (1) in “Firmware Update” panel;
- click “Execute Update” button and follow the on-screen instructions.

To transmit a firmware update directly to the Micro SD card:

- insert the Micro SD card into the computer via a card reader or the provided Micro SD to SD card adapter;
- select “micro-SD Update” option (2) located in “Firmware Update” panel;
- click “Browse for micro-SD” in order to direct the software to the Micro SD card;
- click “Execute Update” and follow on-screen instructions;
- once updated, remove the Micro SD card from the computer;
- insert the updated Micro SD card into **SmartyCam** with the system turned OFF;
- with **SmartyCam** lens facing away, hold down the far right button and momentarily press the central power button; continue holding the right button down until **SmartyCam** shows its splash screen featuring the Linux logo: then it is possible to release it.

5.4 – SmartyCam Identification

"**SmartyCam identification**" button provides real-time system and firmware information about **SmartyCam**.



SmartyCam Info Net window categorizes your system information into two sections: SmartyManager information and **SmartyCam** information. **SmartyManager** information section tells what software release/version is currently running on the computer and when it was released.

SmartyCam information section outlines what release/version of firmware **SmartyCam** processors are running (Example main processor firmware: **01.01.02** and slave processor firmware: **47.05.16**), the release date of the firmware, **SmartyCam** serial number (Example: **2101353**), and the revision SVN identifier (Example: **2444**).

5.5 – Language selection

Language Selection feature allows to choose **SmartyManager** viewing language. Choose the preferred viewing language and click "OK" to enable this feature.